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EXAMINER

MAY, ROBERT J

ART UNIT PAPER NUMBER

2885

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,551

Applicant(s)

LEE, HEA-CHUN

Examiner

Robert May

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1-20, 22 and 23-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-9, 11 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torihara in view of Watai.

In regard to Claim 1, Torihara discloses in Figure 1 a light guide plate 3, comprising an incident face (vertical face of light guide 3, shown not labeled adjacent to light sources 2), a light reflecting face 4 which reflects the light towards a light exiting face 3a, a light reflecting member 3b for covering the light incident face forming a light receiving space that is defined by the light reflecting member and incident face, at least two lamps 2 spaced apart from each other by a second distance wherein the sum of the distance between the lamps 2 and both diameters of the lamps are shown to be greater than the first distance being the width of the incidence face, and a receiving container 16 for receiving the light guide plate 3, and light reflecting member 4. Torihara fails to disclose the light reflecting member including a chamfer disposed at an edge enhancing the reflecting efficiency. Watai discloses in Figure 12, a chamfer (shown but not labeled) located at an edge of the reflecting member for reflecting the light towards the incidence face. Therefore, it would have been obvious to one of ordinary skill in the art at the time

the invention was made to modify the reflecting member of Torihara with the chamfered edge of Watai for reflecting the light towards the incident side of the light guide.

In regard to Claim 11, Torihara further discloses in Figure 1, a liquid crystal display panel 6 which faces the light exiting face 3a and is received by the container 16, and a chassis 13 where a first portion thereof presses against an edge of the liquid crystal display panel 6 (firmly held to the LCD panel 6 Cols 6-7, 67+).

In regard to Claims 5 and 15, Torihara discloses in Figure 1, the two lamps 2 as having the same diameter.

In regard to Claims 6 and 16, Torihara discloses in Figure 1, the lamps including a first lamp 2 and a second lamp 2 wherein a first lamp is shown to be positioned at a first edge of the light incident face and the reflecting face 4 and the second lamp disposed near a second edge diagonally opposite to the first edge.

In regard to Claims 7 and 17, Torihara fails to disclose the light reflecting member as including a chamfer disposed at the second edge, but Watai discloses in Figure 12, a chamfer (shown but not labeled) located at an edge of the reflecting member for reflecting the light towards the incidence face, but fails to show the chamfer as being located at the second edge as claimed being diagonally opposite to the incident and reflecting face edge. Variations in reflector shape, such as the chamfer of Watai, are well known methods of improving the light reflection in backlight assemblies such as that of Torihara. Accordingly, it would have been obvious to locate a chamfer where needed including at the second edge, on the backlight of Torihara.

Regarding Claims 8 and 18 Torihara fails to disclose the first lamp being disposed near a third edge and a second lamp being disposed near a fourth edge being diagonally opposite to the third edge. It would have been an obvious expedient to reverse the first and second lamps so that the first lamp resides at the third edge and the second lamp is positioned at the fourth edge being diagonally opposite to the third edge for accommodating a particular configuration of the backlight assembly *see In re Gazda*, 219 F.2d 449, 104 USPQ 400.

In regard to Claims 9 and 19, Torihara fails to disclose a chamfer disposed at the fourth edge, however Watai discloses in Figure 12, a backlight assembly with a reflecting member 40 having a chamfer (flat surface indicated by leader line) at a fourth edge diagonally opposite to the third edge for directing the light towards the incidence face. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflecting member of Torihara with the chamfer of Watai to direct the light towards the incident face.

Claims 2-4, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torihara and Watai as applied to Claims 1 and 11, and further in view of Imai. Torihara fails to disclose a groove in the incident face having a cross section that is V-shaped or curved. Imai discloses in Figures 1 and 2 a backlight assembly with light guide 30,32 having a groove at the incident face with a V-shaped 33 or curved shape 31 cross section so that a larger section of the incident face is contacting or exposed to the light source 17 (Col 3, lines 22-35). Therefore it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify the incident face of Torihara with the curved or V-shaped grooves of Imai so that a majority of the incident face is in contact with the light source.

Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torihara and Watai as applied to claims 1 and 11 above, and further in view of Nagatani. Torihara fails to disclose the centers of the lamps positioned in a same plane that is parallel to the light exiting face or horizontal. Nagatani discloses in Figure 13 a first and second lamp 43G, 43RB wherein the centers thereof are positioned on a plane that is parallel to the light exiting face (upper horizontal face of light guide 1) which provides for a shorter vertical profile or width of the backlight assembly with the two lamps arranged in such parallel configuration. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the lamps of Torihara in a parallel configuration to shorten or reduce the vertical profile of the backlight assembly.

Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torihara in view of Nagatani.

Regarding Claim 22, Torihara discloses in Figure 1 a light guide plate 3, comprising an incident face (vertical face of light guide 3, shown not labeled adjacent to light sources 2), a light reflecting face 4 which reflects the light towards a light exiting face 3a, a light reflecting member 4 for covering the light incident face forming a light

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receiving space that is defined by the light reflecting member and incident face, at least two lamps 2 spaced apart from each other by a second distance wherein the sum of the distance between the lamps 2 and both diameters of the lamps are shown to be greater than the first distance being the width of the incidence face, and a receiving container 16 for receiving the light guide plate 3, and light reflecting member 4. Torihara fails to disclose the lamps being horizontally disposed. Nagatani discloses in Figure 13 a first and second lamp 43G, 43RB, which are horizontally disposed, which provides for a shorter vertical profile or width of the backlight assembly with the two lamps arranged in such horizontal configuration. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the lamps of Torihara in a horizontal configuration to shorten or reduce the vertical profile of the backlight assembly.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Torihara and Nagatani as applied to claim 22 above, and further in view of Kretman (6,497,946). Torihara fails to disclose one of the at least two light sources include a white light source. Kretman discloses in Figure 9b, the use of a white light source in a backlight assembly where the light source is a white light source which is an appropriate illuminating light color for LCD backlight modules (Col 12, lines 16-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the at least two light sources with the white light source as taught by

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Kretman because white light is an appropriate illuminating light color for LCD backlight modules.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Torihara and Nagatani as applied to claim 22 above, and further in view of Watai. Torihara fails to disclose the light reflecting member including a chamfer disposed at an edge enhancing the reflecting efficiency. Watai discloses in Figure 12, a chamfer (shown but not labeled) located at an edge of the reflecting member for reflecting the light towards the incidence face. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflecting member of Torihara with the chamfered edge of Watai for reflecting the light towards the incident side of the light guide.

Allowable Subject Matter

Claim 21 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claims 21, the prior art does not teach or show a backlight assembly comprising a light guide plate with a light incidence face being a first distance and a light reflecting member covering the light incidence face forming a lamp receiving space with at least two lamps disposed in the lamp receiving space where the sum of diameters

and the distance between the two lamps is larger than the first distance and the highest point of a lower lamp is higher than the lowest point of an upper lamp.

Response to Arguments

Applicant's arguments filed March 5, 2007 have been fully considered but they are not persuasive.

The applicant argues that there is no motivation to combine Watai with Torihara to remedy the deficiency of Torihara in having a chamfer to enhance the reflection efficiency. The Examiner disagrees because Watai clearly teaches a chamfer disposed at an edge. This is seen to enhance reflection efficiency by better reflecting the light towards the incident surface of the light guide.

The applicant argues that the mere reversal of parts under *In re Gazda* cannot be properly applied because Torihara fails to disclose a chamfered edge. The examiner disagrees because as asserted above the mere reversal of the lamp elements would have been known to one of ordinary skill in the art to suit the particular application at hand and does not need to account for the chamfered edge as required by Claims 1 and 11.

The applicant argues that because Nagatani teaches that the light guide plate is thicker than the sum of the diameters of the two lamps and the second distance, that there is no motivation to have the two lamps lie in a plane that is parallel to the light exiting face of the light guide. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can

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only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Nagatani may disclose that the light guide plate is thicker than the sum of the two diameters and second distance, but Torihara discloses a configuration that would benefit and be able to substantially reduce the vertical profile of the backlight module disclosed because the sum two diameters and second distance is greater than the thickness of the first distance (i.e. incident surface of the light guide). Furthermore, it appears that the applicant is arguing against the Nagatani reference individually and it is pointed out to the applicant that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

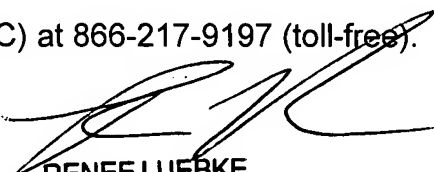
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert May whose telephone number is (571) 272-5919. The examiner can normally be reached between 9 am– 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong (James) Lee can be reached on (571) 272-7044. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300 for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval PAIR system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RENEE LUEBKE
PRIMARY EXAMINER